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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/383.889	08/26/1999	DONALD F. CALDWELL	113518	7153

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EXAMINER

ROBINSON, GRETA LEE

ART UNIT                      PAPER NUMBER


2177

DATE MAILED: 04/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No. <b>09/383,889</b>	Applicant(s) <b>Cadlwell et al.</b>
Examiner <b>Greta Robinson</b>	Art Unit <b>2177</b>



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1)  Responsive to communication(s) filed on Jan 24, 2002
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- 4)  Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-10 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.
- 12)  The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a)  All b)  Some\* c)  None of:
- Certified copies of the priority documents have been received.
  - Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- 15)  Notice of References Cited (PTO-892)                      18)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16)  Notice of Draftsperson's Patent Drawing Review (PTO-948)                      19)  Notice of Informal Patent Application (PTO-152)
- 17)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_                      20)  Other:

Art Unit: 2177

### **DETAILED ACTION**

1. Claims 1-10 are pending in the present application.

#### ***Oath/Declaration***

2. The Office no longer checks the date of execution of the oath or declaration and the Office will no longer require a newly executed oath or declaration based on an oath or declaration being stale (that is when the date of execution is more than 3 months prior to the filing date of the application) or where the date of execution has been omitted. However, applicants are reminded that they have a continuing duty of disclosure under 37 CFR 1.56. See MPEP 602.05

Note the date of execution for two of the inventors is not stated on the declaration. Also, the provisional application date on the declaration does not correspond with the date on page 1 of the disclosure. Our records acknowledge December 10, 1998 as the filing date for provisional application 60/111,781. Correction is required.

#### ***Specification***

3. The disclosure is objected to because of the following informalities:  
page 5, line 24 should read "compressed data 140" instead of "compressed data signals 140";  
page 6, line 2-3 should read "recovered data 180" instead of "input data 180".  
Appropriate correction is required.

Art Unit: 2177

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-5 and 7-10 rejected under 35 U.S.C. 102(e) as being anticipated by Breternitz Jr et al US Patent 6,216,213 B1.

Regarding claim 1, **Breternitz Jr. et al.** teaches a method for improving compression of a stream of data comprising:

transforming the data in accordance with a schema [col. 3 lines 24-29; also note abstract];

and

compressing the transformed data [note element *compressed (40)* figure 2; see col. 5 lines 21-32].

Breternitz et al. teaches transforming data in accordance with a schema and compressing/decompressing the data.

Art Unit: 2177

6. Regarding claim 2:

wherein the transformation step further comprises the step of partitioning the data into a first and second portion which are separately compressed [note element *divided code (30)* figure 2; see col. 4 lines 50-66].

7. Regarding claim 3:

wherein the transformation step further comprises the step of reordering the data into column major order [note element (140) figure 1].

8. Regarding claim 4:

wherein the transformation step further comprises the step of partitioning the data into columns which are separately compressed [note elements 930, 40) figure 2; see col. 4 line 50 through col. 6 line 32].

9. Regarding claim 5:

decompressing the compressed data; and transforming the data in accordance with a schema [*decompressed (45)* figure 2].

10. The limitations of apparatus claims 7-10 parallel method claims 1-4; therefore they are rejected under the same rationale.

Art Unit: 2177

*Claim Rejections - 35 USC § 103*

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breternitz Jr. et al US Patent 6,216,213 B1 in view of Houlding et al. *Low entropy image Pyramids for Efficient Lossless Coding*.

Regarding claim 6, Breternitz Jr. et al. teaches "generating a schema for improving compression of a stream of data" through compression of data and partitioning portions of the data through cache line blocks (500); they do not teach separating a sample of data through entropy. **Houlding et al.** teaches compression performance through entropy coding. Houlding Jr.

Art Unit: 2177

et al. analyzes the effects of low entropy and high entropy [see: abstract; page 1057 (left hand column), page 1151 first paragraph and the last paragraph]. It would have been obvious to one of ordinary skill at the time of the invention to have combined Houlding et al with Breternitz Jr et al because entropy coding would optimize the compression scheme in Breternitz Jr. et al..

13. In the response Applicant argued the following:

(1) The Examiner's rejection appears to reflect some confusion regarding what is being "transformed" as well as the terms "schema" as utilized in the present invention and "cache line block" as utilized in Breternitz patent.

**In response**, the present invention defines the term *schema* as follows: "*The schema 120 represents coded instructions for partitioning and reordering the data in a manner that optimizes the compression of the input data*" [see page 5 lines 19-21].

Independent claim 1 and 7, recite "*transforming the data in accordance with a schema*". In Breternitz the pre-compression activity (101, figure 1) and (401, figure 4) represents transforming the data in accordance with a schema . Pre-compression activity represents such steps as compiling and linking of source code. The schema, as defined in the present invention simply represents coded instructions for partitioning and reordering the data. Breternitz' pre-compression activity allows the uncompressed code to be divided or partitioned see col. 3 lines 5-29. The preamble of claim 6 recites, "generating a schema for improving compression of a stream of data". Again schema represents instructions for partitioning and reordering of data to optimize

Art Unit: 2177

the compression. The pre-compression steps (101) provides for the element of generating code or instructions to optimize the compression process see col. 3 lines 5-24.

(2) The fact that in the Breternitz patent, the “memory (20) is divided into cache line blocks (500)” has nothing to do with the schema transformation process described in the present invention.

**In response**, the examiner disagrees. This feature is a part of the compression portion and allows the data to be reordered. Note the abstract states: “During a compression portion, memory (20) is divided into cache line blocks (500)”.

14. Applicant's arguments filed January 24,2002 have been fully considered but they are not persuasive.

#### *Conclusion*

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Ng et al.** US Patent 5,678,043

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



Art Unit: 2177

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greta Robinson whose telephone number is (703)308-7565. The examiner can normally be reached Monday through Friday from 9:30 AM to 6:00 PM. If any attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached at (703) 305-9790.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703)308-6306, (for formal communications; please mark "EXPEDITED PROCEDURE") Or: (703)746-5657, (for informal or draft communications, please label

Art Unit: 2177

“PROPOSED” or “DRAFT”) Hand delivered responses should be brought to Crystal Park II,  
2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be  
directed to the Group receptionist whose telephone number is (703)305-9600.

A handwritten signature in black ink, appearing to read "Greta Robinson". The signature is fluid and cursive, with a large initial "G" and "R".

Greta Robinson

April 14, 2002